5: Carlson & Jones E, N-4, 5 (1933)1939
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fumes were inhaled. The stems of the latter were tied in bundles with which the Comanche switched themselves.

Yucca roots (*Yucca louisianensis*) were ground up for soap. Various species were used as detergents by Indians in the Plains and the Southwest particularly. The ordinary method of preparation is to strip the bark off the root and beat the root to a pulpy mass. The pulp is cut into small pieces which are dried in the sun and can then be kept until needed. When required, two or three of these pieces are soaked in water for about an hour, after which the water is agitated briskly with the hands. Suds immediately appear, forming a good lather. The Southwestern Indians prescribe yucca suds for ceremonial hair washing and also prefer them for laundering blankets and woolen garments. The roots have a high saponin content; commercial soap has been successfully manufactured from them. Another plant used in toiletry was an unidentified species (Comanche: *nemeʎisas*) of the mint family, the fragrant leaves of which were valuable for perfuming.

The leaves of croton (*Croton monanthogynus*) were said to be ground and mixed with brains of animals for use in curing hides. This and other species of croton were widely utilized medicinally, but we know of no other instance of its employment in tanning. Richardson (19, p. 67) quotes two somewhat varying discussions of Comanche tanning, but in neither of these is any plant material mentioned.

Most tribes of Indians prepared brooms by binding together the tough and moderately flexible stems of some plant, but there seems to be little or no uniformity in the plants thus used. The one specified for this purpose by the Comanche was the snakeweed (*Gutierrezia sarothrae*).

Comanche names were obtained for all the plants collected, yet the informants, although knowing the names, could give no use for a number of them. Professor Kroeber has stressed the importance of collecting and recording negative data of this sort as well as positive data, and lists of "plants not used" have appeared in papers by his students. The Comanche informants could offer no use for the following plants: cattail (*Typha latifolia*), white sage (*Artemisia ludoviciana*), false indigo (*Amorpha angustifolia*), western ragweed (*Ambrosia psilostachya*), a grass (*Elymus sp.*), and two unidentified plants bearing the Comanche names *kusiwɔna*, and *itse* or *ṭimɔyhɔ*. It may well be that some or all of these were utilized and that their functions

167: Peters T-5 (1843) 1877 NT13 Navaho NT13
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rain or pure river water: the point is stopped, and the water allowed to remain on the ashes for a day and night, and then permitted to drip into the vessel placed to catch the ley.

This ley is a little colored, and is clarified by the same process of filtration through clean white sand, or sand that has been used for the same purpose before — when clarified, the ley is used as before stated, and especially to set the colors, which seems to be the principal use of it. It has no caustic quality after filtration, but an astringency peculiar to itself — rather a pungent than burning quality. It is sometimes used to dilute the darker dyes and produce lighter shades.

The wool to be dyed is washed in warm water until perfectly cleansed of the natural oil — using the root of a plant very abundant in Texas and southern New Mexico, as well as most of the southern states, of a very saponaceous quality, and known as the soap plant. In all their best fabrics — blankets, belts, leggings, etc., made of wool, their finest fleeces are used, and it is not unknown to many of our army officers and others, that the Navajoes give great attention to their management of sheep, and often produce fleeces almost or quite equal to the merino in fineness and softness of texture, by their skilful crosses and selections made after long and minute observations and care. A Camanche and Navajoe are as much delighted with the possession of a superior ram and ewe as of a fine horse, to the breeding of which they also give much attention. Von Thaer would not be more so with the possession of his finest buck. All their wool is dyed before spinning, and this is done by submerging it in the dye and letting it remain ten or fifteen days, the dye-pot being left covered: but during this soaking the wool is turned over once every day. Sometimes the lighter shades are imparted to the wool by soaking a shorter time — they say this produces a clearer tint. If not dark enough, the same process is repeated with fresh dye. I have been told by my guide, that the Camanches fumigate the wool after dying, over a smoke of the above described wood, to deepen the color, but I never saw it done.

Their green color is produced from the leaves of several plants, the juice of which is expressed in the same manner as from the flowers, and used in the same manner.